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1/4

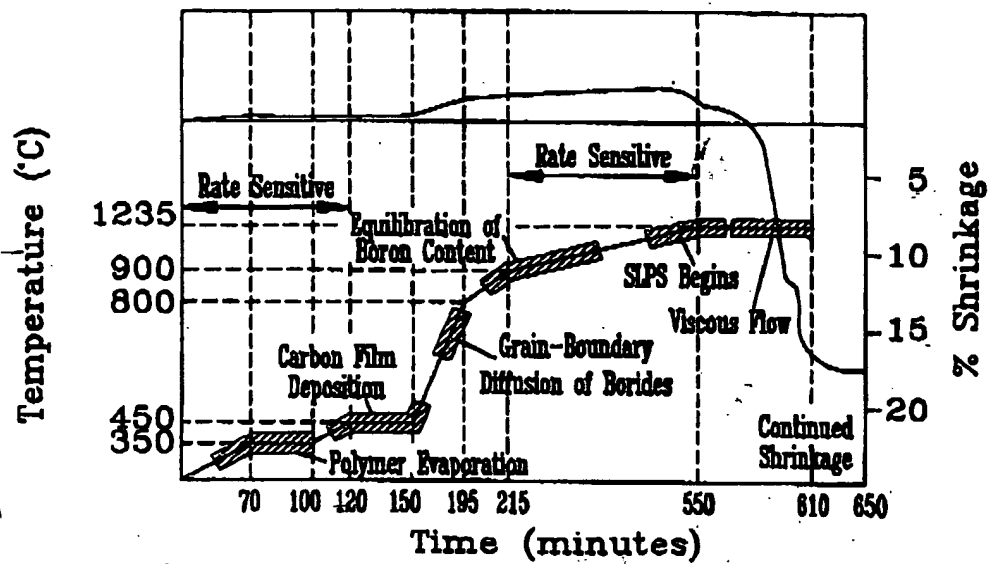


FIG 1 *PRIOR ART*

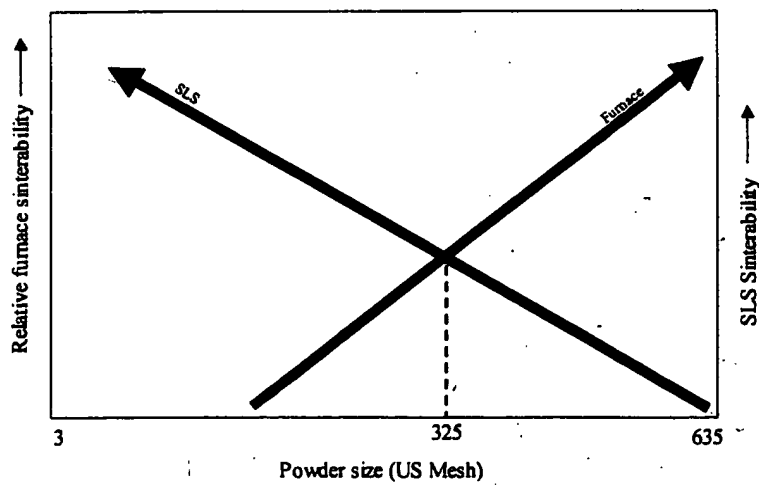


Figure 2 Powder size vs SLS and furnace sinterability

2/4

	Metal powder size distribution		Metal and binder powders blend			
	Total wt %	Size micron	Non Borided wt %	Borided wt %	Nylon 12 wt %	BMI wt %
Original	55 45	-88 to +44 -44	90	10	3	0.5
New	100	-44	85	15	0.5	0.5

Fig 3

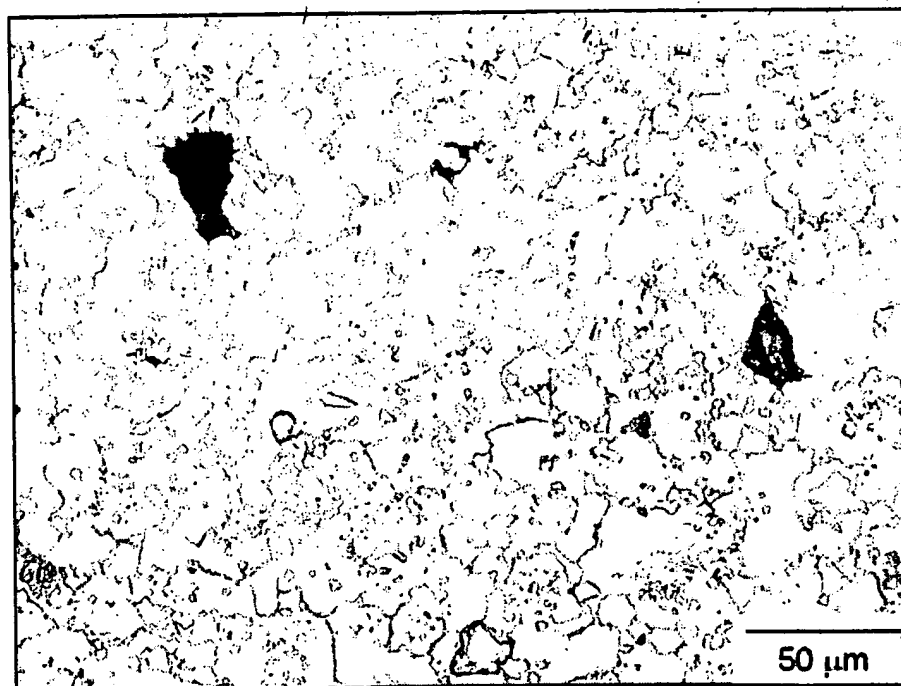


Figure 4 Sample 215-3, 6<sup>th</sup> sintering run, sintering temperature 2255°F, etched, optical, bright field image, ~400x

3/4

Parameters/Trial	6
Material (%-% by wt.)	Alloy230+B (85-15)
Binder (% by wt.)	0.5% N-12
BMI (% by wt.)	0.5% BMI
Powder Distribution ( $\mu\text{m}$ )	-44
Debind Cycle	
Ramp Rate ( $^{\circ}\text{F}/\text{min}$ )	2
Hold Temp ( $^{\circ}\text{F}$ )	1652
Hold Time (min)	15
Pressure (torr)	700
Gas	Ar
Sinter Cycle	
Ramp Rate ( $^{\circ}\text{F}/\text{min}$ )	1
Hold Temp ( $^{\circ}\text{F}$ )	2255
Hold Time (min)	10
Pressure (torr)	300
Gas	5%H <sub>2</sub> -95%Ar

Fig 6

4/4

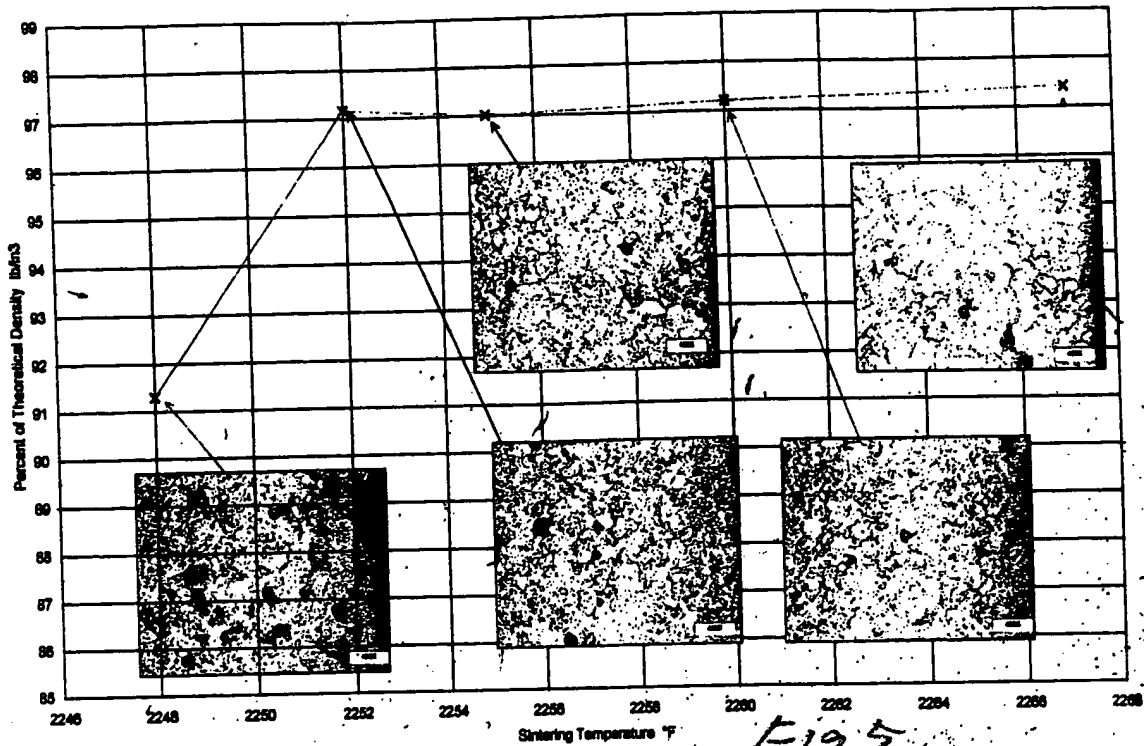
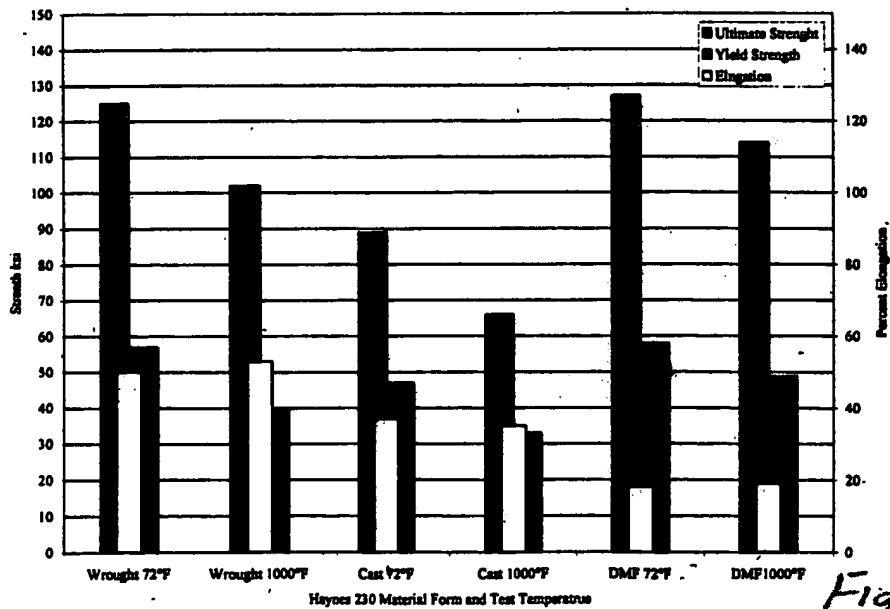


Figure 5 Plot of sintering temperature vs. density and resulting microstructures



Comparison of DMF Alloy 230, cast and wrought Haynes 230 properties